CLAIMS

What is claimed is:

1. A method in a video decoding system for adapting to resource constraints, said method comprising steps of:

determining whether a resource constrained mode is to be initiated; and

responsive to determining that the resource constrained mode is to be initiated,

initiating the resource constrained mode, including modifying a resource access priority.

2. The method of claim 1, wherein the resource access priority is a priority that a component is assigned for accessing a data bus.

3. The method of claim 2, wherein the component is selected from a group consisting of: a processor, a video decoder, an audio decoder, a video digital encoder, a memory buffer, a data storage device, and a digital to analog converter.

4. The method of claim 1, wherein the resource access priority is a priority that a component is assigned for accessing a data bus while performing a specific function.

5. The method of claim 4, wherein the specific function is selected from a group consisting of: writing data to a compressed audio buffer, writing data to a compressed video buffer, reading data from a compressed audio buffer, reading data from a compressed video buffer, writing data to a video picture buffer, writing data to a graphical data buffer, reading data from a graphical data buffer, writing data to an alpha-blend plane buffer, writing data to an off-screen buffer, writing data to an audio buffer, reading data from an audio buffer, reading data from an off-screen buffer, and reading data from an alpha-blend plane.

6. The method of claim 1, wherein the resource access priority is a priority that a component is assigned for accessing a data storage device.

7. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to inadequate memory availability.

8. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to inadequate bus bandwidth availability.

9. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to user interaction.

10. The method of claim 16, wherein the resource constrained mode is one of a plurality of resource constrained modes that can be initiated.

11. The method of claim 16, wherein the user interaction includes causing the video decoding system to reduce spatial resolution of video output.

12. The method of claim 16, wherein the user interaction includes causing graphics to be generated and output along with the video output.

13. The method of claim 1, wherein the determining step is responsive to receiving user input requesting a resource constraining service.

14. The method of claim 13, wherein the resource constraining service is an interactive program guide.

15. The method of claim 13, wherein the resource constraining service includes the presentation of a video and graphical data.

16. The method of claim 1, wherein the determining step includes determining that the resource constrained mode should be initiated responsive to receiving from a video transmitter data describing the received video input.

17. The method of claim 1, wherein the received video input is encoded using a Motion Picture Experts Group (MPEG) encoding scheme.

18. The method of claim 1, wherein the modification in resource access priority is responsive to a degree of resource constraint.

19. The method of claim 18, wherein the degree of resource constraint is determined in view of an amount of resource availability and an amount of additional resource needed.

20. The method of claim 19, wherein the resource constraint includes memory constraint.

21. The method of claim 19, wherein the resource constraint includes bus bandwidth constraint.

22. The method of claim 19, wherein the amount of additional resource needed is determined at least according to at least one look-up table.

23. The method of claim 19, wherein the amount of additional resource needed is determined at least according to a history of resource need.

24. The method of claim 19, wherein a function for which resource access priority is modified is also based upon degree of resource constraint.

25. The method of claim 19, wherein a component for which resource access priority is modified is also based upon degree of resource constraint.

26. The method of claim 1, wherein the determining and initiating steps are performed by processor in a digital home communication terminal.

27. The method of claim 1, wherein the initiating step includes continuing to present audio to a user at a regular rate and maintaining audio and video synchronization during the resource constrained mode.

28. The method of claim 1, further comprising a step of terminating the resource constrained mode responsive to determining adequate resource availability.

29. A video decoding system for adapting to resource constraints, said system comprising:

determination logic configured to determine whether a resource constrained mode is to be initiated; and

initiation logic configured to initiate the resource constrained mode responsive to the determination logic, including modifying a resource access priority.

30. The system of claim 29, wherein the determination logic is further configured to determine that the resource constrained mode is to be initiated responsive to inadequate memory availability.

31. The system of claim 29, wherein the determination logic is further configured to determine that the resource constrained mode is to be initiated responsive to inadequate bus bandwidth availability.

32. A video decoding method comprising the steps of:

determining that a resource access priority is to be modified; and

modifying the resource access priority accordingly.

33. The method of claim 32, wherein the determining step is responsive to a step of determining that at least one resource is constrained.

34. The method of claim 32, wherein the determining step is responsive to a user requesting a resource constraining service.